



THE KAISER COMMISSION ON
Medicaid and the Uninsured

Sicker And Poorer: The Consequences of Being Uninsured

A Review of the Literature

Prepared by

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for

THE COST OF NOT COVERING THE UNINSURED PROJECT

An Initiative of the Henry J. Kaiser Family Foundation

Briefing Charts
May 10, 2002
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BACKGROUND AND OVERVIEW

Figure 1

Project Overview

- *The Cost of Not Covering the Uninsured* is an initiative of the Kaiser Family Foundation to explore what is known and what should be known about the costs society incurs by leaving one in every seven Americans uninsured. Its purpose is to develop new information and analyses to further our understanding of and raise awareness about this critical issue.
- *Sicker and Poorer* is a comprehensive review of the literature assessing the most important effects of health insurance and represents the first report under *The Cost of Not Covering the Uninsured* initiative.

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Figure 2

Review Methodology

- This review screened over 9,000 citations of both published and unpublished research on the consequences of being uninsured.
- The report includes references to 230 distinct sources, most of which appeared over the last twenty years.
- 94 studies of the association between health outcomes and either insurance coverage or medical use that met the following criteria were reviewed:
 - Explicit identification of an uninsured or self-pay population;
 - Total sample size of at least 100 cases; and
 - Multivariate statistical analysis of the relationships among health insurance, medical care use, and health.

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Figure 3

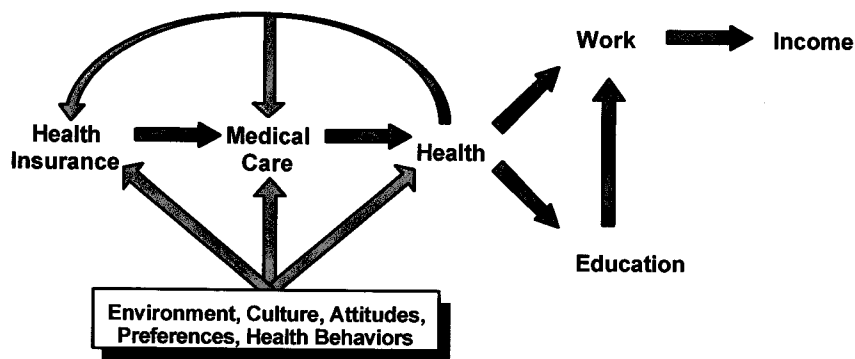
Conceptual Framework

- Lack of insurance reduces timely and efficient use of high quality medical care.
- Lower medical care use reduces health.
- Poor health reduces ability to work and educational attainment.
- Lower productivity and education reduce earnings.

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Figure 4

Relationships Among Health Insurance, Medical Care Use, Health, Education, and Income



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Figure 5

Methodological Considerations

- There are no randomized trials.
- Conclusions drawn from the weight of the evidence from the best designed observational studies and natural experiments.
- How consistent are the results of different studies?
 - specific diseases vs. general mortality
 - different populations, time periods, analytic approaches

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Figure 6

Quality and Quantity of the Evidence

- 70% of health outcomes analyses imply positive association between having health insurance or using more medical care and better health outcomes.
- Many of these studies analyze very large samples, control for many potential confounding variables, and/or use statistical methods or research designs to mitigate potential statistical bias.
- There is a high degree of consistency across studies of different populations, different time periods, different methodological approaches.
- Analyses that find no association tend to:
 - examine trends from earlier time periods (pre-1970);
 - look at resource use within well-insured populations (Medicare), not uninsured compared to insured;
 - focus on intermediate rather than final health outcome (birthweight rather than infant survival).

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Figure 7

Major Findings

- Overall, health services research published in the past 25 years makes a compelling case that having health insurance or using more medical care improves health:
 - Having health insurance reduces mortality rates by 10-15%.
 - "Better" health improves annual earnings by 10-30% (depending on measures and specific health condition) and increases educational attainment.

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KEY FINDINGS

Figure 8

Do the Uninsured Use Fewer Services and Have Worse Outcomes for Specific Diseases and Conditions?

- Smaller proportions of the uninsured are screened for cancer, cardiovascular disease, and diabetes.
- Uninsured heart attack and trauma patients are less likely to receive surgical interventions.
- Uninsured cancer patients are more likely to be diagnosed at late stage and have shorter survival; uninsured heart-attack patients have higher mortality; uninsured patients who enter ESRD programs are more likely to have worse kidney function; uninsured patients with appendicitis are more likely to have ruptured appendix; and uninsured trauma patients are more likely to die.

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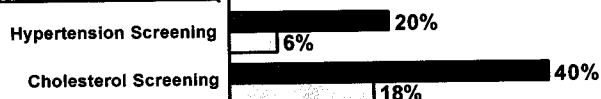
Figure 9

Percentage of Adults NOT Receiving Preventive Services, Uninsured (for a year or longer) vs. Insured, 1997-98

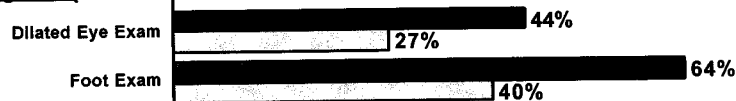
Cancer Screening



Cardiovascular Risk Reduction



Diabetes Management



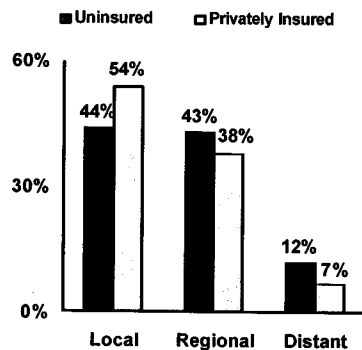
Note: All differences are statistically significant after adjusting for age, sex, race/ethnicity, region, employment, education, and income.
SOURCE: Ayanian, 2000.

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Figure 10

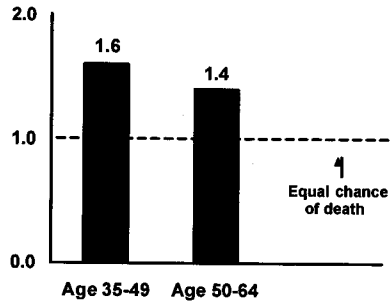
Stage of Breast Cancer at Time of Diagnosis by Insurance Status

Distribution of Women with Breast Cancer by Disease Stage at Time of Diagnosis



Relative Risk of Death from Breast Cancer by Age and Insurance Status

Adjusted Relative Risk of Death* Uninsured/Insured



Ratios > 1.0 indicate uninsured more likely than insured to die from breast cancer

Note: Distant stage is most advanced disease.
* Differences are statistically significant after adjusting for age, race, marital status, income, and number of co-existing diagnoses

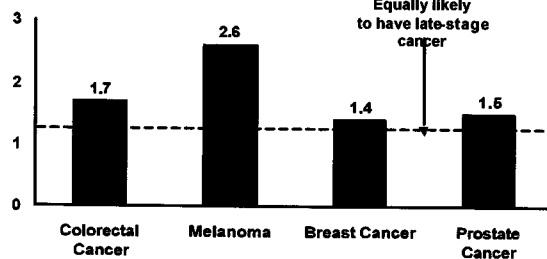
SOURCE: Ayanian JZ, Kohler BA, Abe T, Epstein AM, 1993

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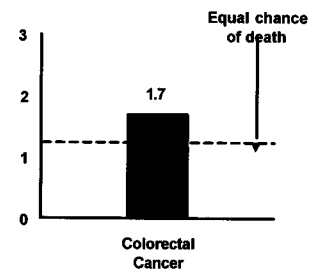
Figure 11

Diagnosis of Late-Stage Cancer, Uninsured Compared to Privately Insured,* 1994

Ratio of the Probability of Diagnosis of Late vs. Early Stage Cancer, Uninsured/Privately Insured



Ratio of the Risk of Death,** Uninsured/Privately Insured



* Privately insured all had commercial indemnity plans.

** Among cancer cases identified in 1994; mortality follow-up through 1997.

All differences are statistically significant after adjusting for age, sex, race/ethnicity, comorbidity, marital status (when appropriate), smoking status, socioeconomic status, education, stage at diagnosis, and treatment

SOURCE: Roetzheim RG, et al., 1999, 2000

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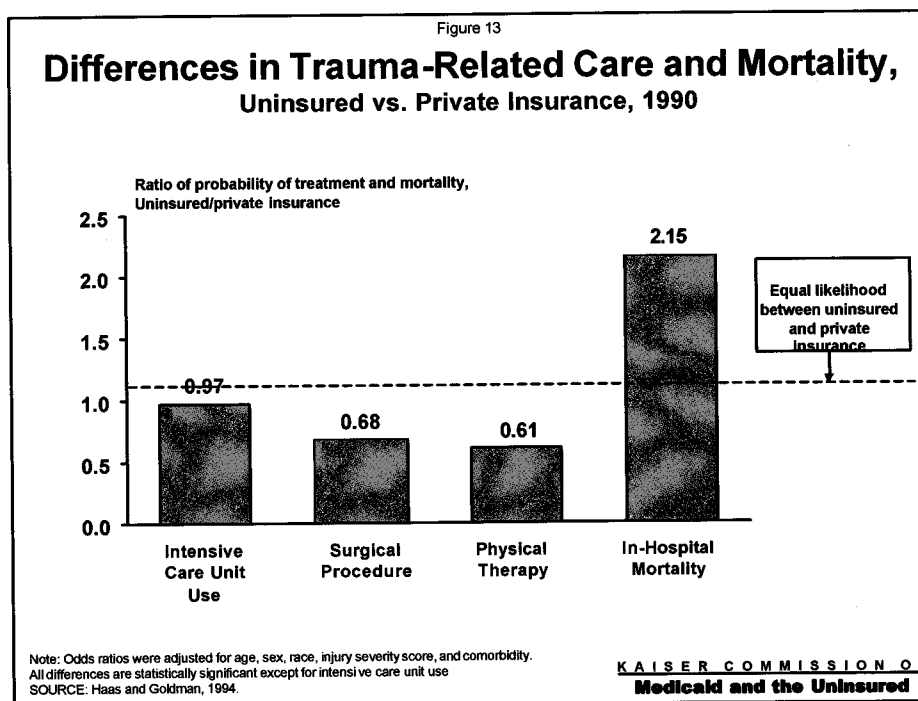
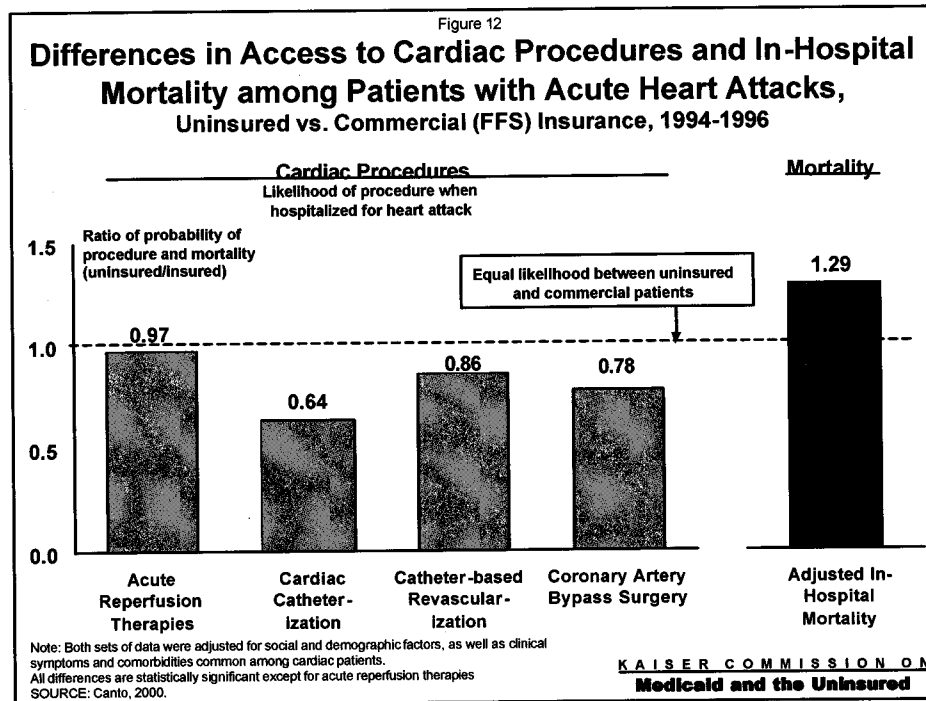


Figure 14

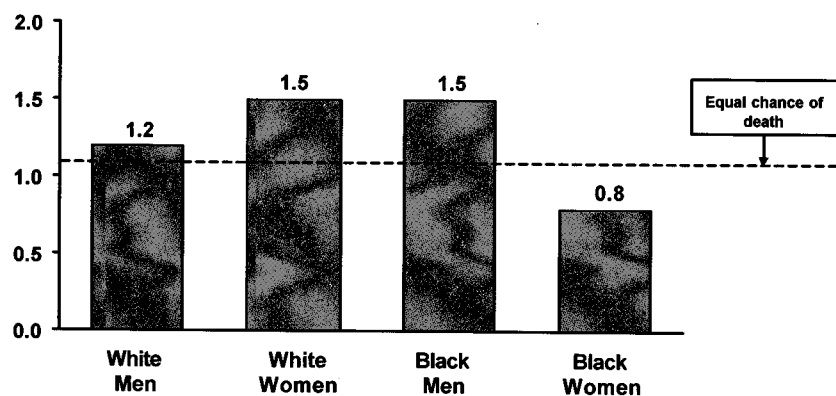
Do Uninsured Adults Have Poorer General Health Outcomes than Insured Adults?

- Longitudinal studies find that those who are uninsured at baseline have higher mortality over time.
- Qualifying for Medicare by turning 65 significantly increases medical care use by the elderly and contributes to lower mortality than would be expected based on projections prior to age 65.
- Uninsured hospital patients are more likely to be admitted in worse condition than those who are privately insured and are more likely to die in the hospital.

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Figure 15

Relative Risk of Death (Uninsured vs. Employer-based Coverage) Among 25-64 Year Olds over a Five Year Period, 1982-87



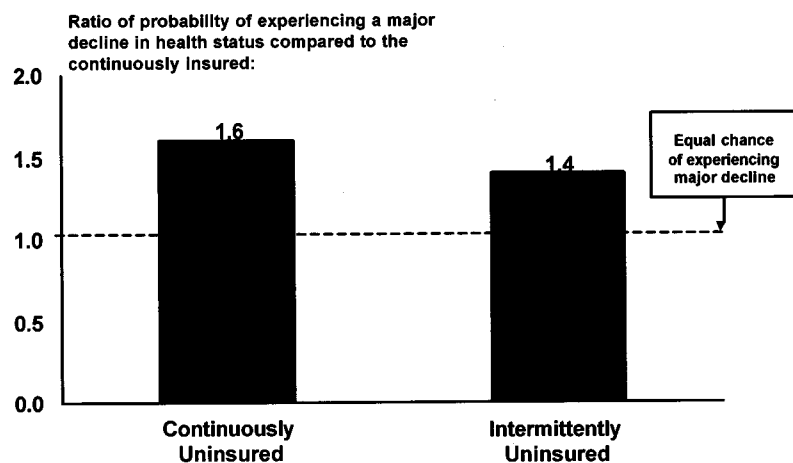
Note: All differences are statistically significant after adjusting for age and income except for black women.
SOURCE: Sorlie, PD, 1994

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Figure 16

Impact of Being Uninsured on Health Status

Among 51-61 Year Olds, 1992-96



Note: Odds ratios are statistically significant after adjusting for age, gender, race and ethnicity, marital status, education, income, and multiple health risk factors and medical history.
SOURCE: Baker, D, et al., 2001.

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Figure 17

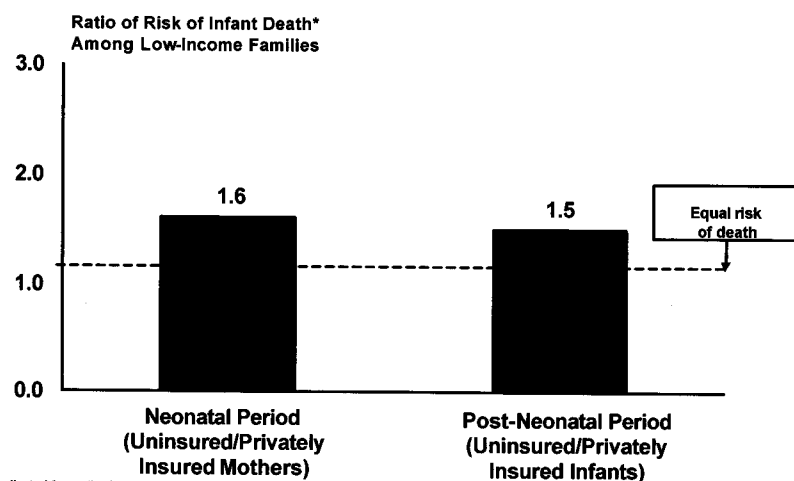
Does Health Insurance Influence the Care of Pregnant Women, Newborns, and Birth Outcomes?

- Having health insurance increases timely initiation of prenatal care, promotes access to C-section deliveries for high-risk births and access to neonatal intensive care for high-risk babies.
- Mixed evidence that more prenatal care improves birthweight; stronger evidence that uninsured babies have poorer survival than the privately insured.
- Expanding health insurance coverage in Canada through national health insurance reduced infant mortality by about 4%.

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Figure 18

Mothers' Prenatal Insurance Coverage and Infant Mortality Risk, 1998

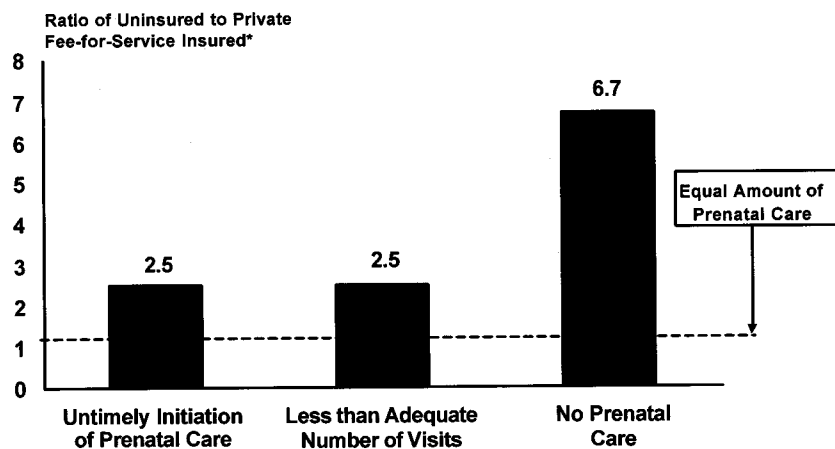


* Odds ratios adjusted for mother's age, education, race/ethnicity, income, health and pregnancy history, and WIC participation
Neonatal period is the first 28 days of life
Low-income is defined as less than 185% of the poverty level
SOURCE: Moss and Carver, 1998

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Figure 19

Access to Prenatal Care, by Insurance Status, 1990



* Odds ratios are statically significant after adjusting for mother's insurance status, race/ethnicity, birthplace, age, parity, education, and marital status
SOURCE: Braveman et. al., 1993

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Figure 20

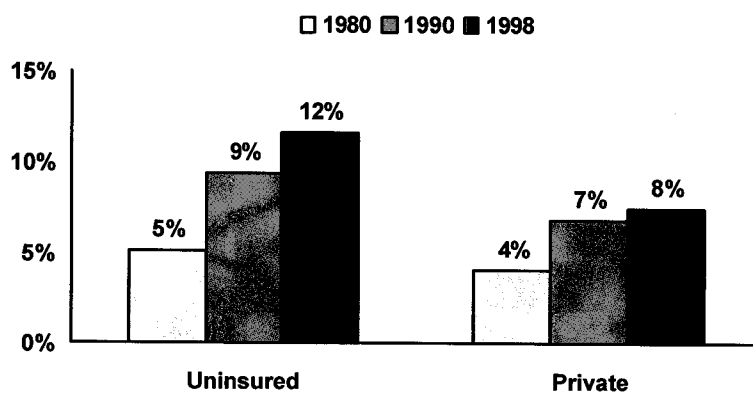
Do the Uninsured Use Medical Care Less Efficiently than the Insured?

- The uninsured are 30-50% more likely to be hospitalized for an avoidable condition.
- The average cost of an avoidable hospital stay in 2002 is estimated to be about \$3,300.

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Figure 21

Hospitalization Rates for Avoidable Conditions, by Health Insurance Status, 1980-98



SOURCE: Kozak, LJ, 2001.

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Figure 22

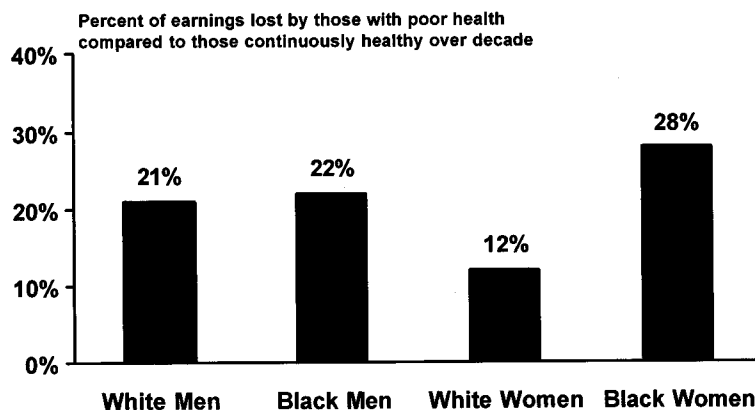
Does Poor Health Reduce Annual Income?

- The combination of less ability to work and lower productivity resulting from poor health has been estimated to reduce earnings by between 10 and 28%, depending on race and gender, over a 10-year period.
 - Among men who worked full-time in 1998, those in poor health had earnings from 9-13% lower than those in good health, depending on firm size.
- Poor health of a family member often leads to reduced work by a family caregiver.

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Figure 23

Effect of Poor Health History on Annual Earnings, among 45-64 Year Olds over a Ten Year Period (1966/67 – 1976/77)

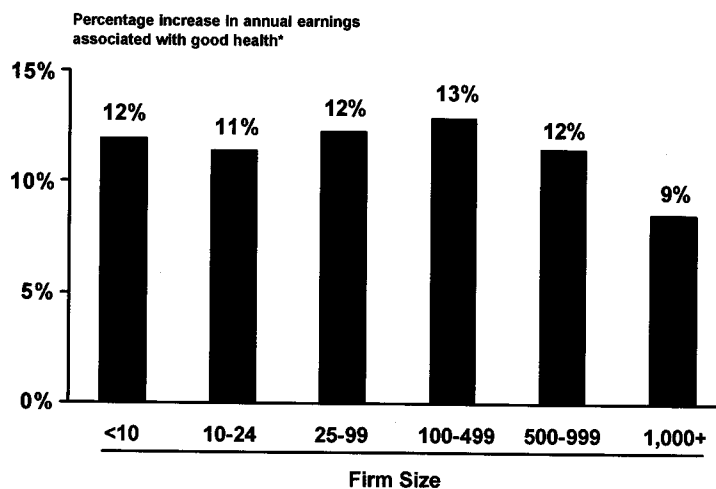


SOURCE: Chirikos, TN and G Nestel, 1985

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Figure 24

Effect of Poor Health on Workers' Annual Earnings, by Firm Size, 1998



* Among full-time, full year working men; good health compared to those less healthy.
SOURCE: Fronstin, P and AG Holtman, 2000.

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Figure 25

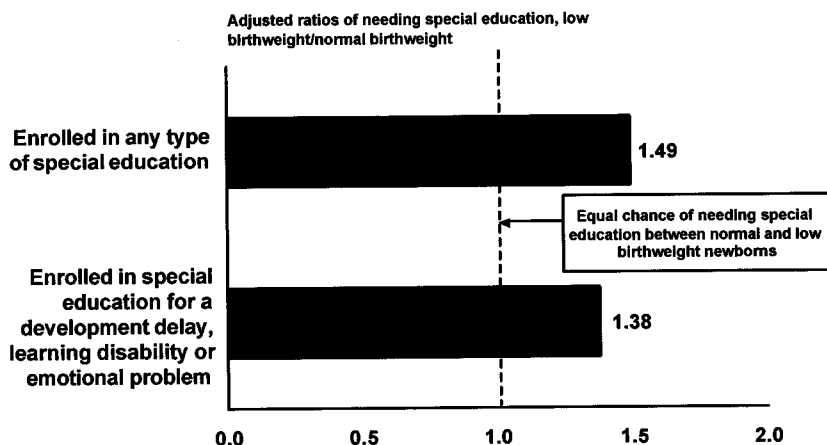
Does Poor Health Reduce Educational Attainment?

- Children in poor health miss more school days and have lower cognitive development.
- Lower educational attainment due to poor childhood health contributes to lower wages and lower labor force participation, which increase the likelihood of not being insured as an adult, thereby increasing the odds of continued poor health as an adult.

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Figure 26

Relationship Between Low Birthweight and Future Need for Special Education



Note: Differences are statistically significant after adjusting for factors associated with need for special education, including family's home environment, the child's characteristics (age, sex, race/ethnicity), and geographic influences.
SOURCE: Chaikind S, and H Corman, 1991.

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SUMMARY AND CONCLUSIONS

Figure 27

Summary of Research Findings

- Uninsured receive less preventive care, are diagnosed at more advanced disease stages, and, once diagnosed, tend to receive less therapeutic care (drugs, surgical interventions).
- Receiving less care increases risk of death and likelihood of poor health status.
- Poor health status affects educational attainment, ability to work, and productivity, which reduce earnings and earning potential.

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Figure 28

Policy Significance

- Expanding health insurance coverage to the uninsured would trigger a series of health and economic benefits by improving medical care efficiency, decreasing mortality rates, increasing educational attainment, and raising earnings.
- Estimates of the magnitude of these potential benefits should become a prominent part of the policy debate over expanding health insurance coverage.
- These benefits could create significant offsets to the direct costs of expanded insurance coverage that should be evaluated when considering how much insurance expansions might cost, who will pay for them, how they will be structured, and whom they might target.

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Figure 29

Next Steps Under This Initiative

- **Future reports and analyses will**
 - **estimate the amount of money already being spent on care provided to the uninsured;**
 - **assess the financial toll on the uninsured when they seek care;**
 - **explore the economic benefits of a fully insured population; and**
 - **evaluate the implications of insurance expansions to the near-elderly (age 55-64).**
- **These analytic efforts will help address some of the critical gaps identified in the literature.**

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Numbers of Studies Reviewed

by Outcome and Relationship to
Health Insurance or
Medical Care Use

(Outcomes Studies in **Bold**)

TOPIC	POSITIVE ASSOCIATION*	NO ASSOCIATION#
Cancer Screening and Health Insurance	9	2
Cancer Outcomes and Health Insurance or Medical Care Use	8	2
Cardiovascular Disease Prevention/Treatment and Health Insurance	20	1
Cardiovascular Disease Outcomes and Health Insurance or Medical Care Use	8	2
Diabetes, Renal Disease, Liver Disease – Prevention/Treatment and Health Insurance	5	0
Diabetes, Renal Disease, Liver Disease Outcomes and Health Insurance	4	0
Trauma Care and Outcomes and Health Insurance	2	1
Other Conditions and Health Insurance	4	2
Adults' General Health and Medical Care Use or Resource Availability	5	10
Adults' General Health and Health Insurance	8	1
Prenatal, Birth, Childhood Care and Health Insurance	17	5
Birth Outcomes: Gestation and Birthweight and Health Insurance or Medical Care Use	8	7
Birth Outcomes: Infant Survival and Health Insurance or Medical Care Use	12	1
Childhood and Maternal Outcomes and Health Insurance	6	3
TOTAL STUDIES OF OUTCOMES AND INSURANCE OR MEDICAL CARE USE	65	29

* Study finds a positive association between having health insurance and using more preventive, diagnostic, or therapeutic medical care, or between having health insurance and using more medical care and outcome.

Study finds no association between having health insurance or using more medical care and outcome.

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